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Well-Being Concepts and Components

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Abstract:

Well-being is a broad, multifaceted construct. This chapter reviews different ways of defining and measuring well-being and the implications this has for understanding the correlates and causes of well-being. Hedonic well-being (HWB), eudaimonic well-being (EWB), and other conceptions of well-being are discussed. Specific components and aspects of HWB are elaborated on. These include the distinction between affective and cognitive well-being. Major aspects of affective well-being include valence, frequency versus intensity, arousal, and interpersonal engagement. Major aspects of cognitive well-being include life satisfaction, life evaluation, and domain satisfaction. Processes underlying the structure of cognitive well-being are discussed including top-down versus bottom-up models, and the tendency to use heuristics versus stable sources of information to evaluate one's life. Trait versus state conceptions of well-being are introduced. Different well-being assessment methods (online, recall, global) can be located on a state-trait continuum. The distinction between state and trait measures of well-being has implications for understanding the structure of affect, the relation between well-being and health, and cultural variation in well-being. Future research is needed to clarify the distinct correlates of affective versus cognitive well-being, as well as how positive and negative emotions are operationalized. In addition, a better understanding of the components of EWB and how they are related to HWB and affective dimensions beyond valence will shed light on the validity of the EWB construct. Finally, greater sensitivity to the state-trait distinction will deepen our knowledge of the processes that shape both HWB and EWB.

Keywords: hedonic well-being, cognitive well-being, affective well-being, state versus trait, emotion, satisfaction

The term *well-being* encompasses all the ways in which people experience and evaluate their lives positively. What exactly it means to experience life positively can be understood in myriad ways. Some equate well-being with *happiness*, but this can sometimes conjure up images of an immensely joyful, cheerful person that many do not identify with. As a result, some prefer to view well-being as a prolonged state of *contentment*. For others still, well-being is simply about *wellness*--as in having good physical and mental health. None of these views is incorrect; but each perspective is incomplete in itself. A great challenge for the science of well-being has been to define and measure this broad, encompassing construct. An important development in this field over the past few decades is the recognition and growing acceptance that well-being consists of many aspects--that it cannot be fully represented by any one measure. A person who is depressed cannot be said to be well; however, to equate well-being with an *absence* of depression misses much of what people strive for when they seek to enhance and preserve their well-being. In other words, well-being includes the lack of suffering, but it is more than this (Diener, 1984; Seligman & Csikszentmihalyi, 2000).

This chapter reviews various conceptions of well-being and how different components of well-being have been measured and studied in the psychological literature. The variety of ways in which well-being has been defined could be said to dilute the construct or render it meaningless. However, the causes, consequences, and correlates of well-being may depend on how it is defined and measured. A single intervention might improve some aspects of well-being but not others. Such an understanding is critical for the design of policies aimed at improving well-being.

Conceptions of Well-Being

What does it mean to “be well”? Numerous scholars have answered this question in different ways, resulting in a variety of well-being concepts. There are two major approaches to conceptualizing well-being (Ryan & Deci, 2001). The first approach emphasizes a person’s evaluation of their own life--both emotionally and cognitively. It has been referred to as *hedonic well-being* (HWB) and consists of (i) frequent pleasant feelings, (ii) infrequent unpleasant feelings, and (iii) an overall judgment that life is satisfying. This tripartite model is also referred to as *subjective* well-being (Diener, 1984) because it prioritizes a person’s own assessment of how well their life is going and whether they are getting the things they want in life--without specific concern for what these “things” actually are.

The second approach includes several concepts that together have been referred to as *eudaimonic well-being* (EWB). This approach takes as its starting point that there are certain needs or qualities that are essential for one’s psychological growth and development; the fulfillment of these needs enables a person to reach their full potential (Ryan & Deci, 2001). The concept of *psychological* well-being (Ryff, 1989) is an example of the EWB tradition. Drawing on the theories of Erikson, Jung, Maslow, and Rogers (among others), Ryff posited six key features of people who are functioning well in life. Such people should have the maturity to be guided by internal standards (autonomy), be capable of trusting and loving others (positive relations), be able to manage external stressors and leverage on opportunities (environmental mastery), have a positive attitude toward themselves (self-acceptance), have important aims and goals (purpose in life), and accept new challenges in life as furthering their development (personal growth). Other EWB approaches emphasize living up to one’s *personal* potential--in line with Aristotle’s view of eudaimonia as living in accord with one’s true nature (or *daimon*). From this perspective, EWB is rooted in the pursuit of goals and activities that are consistent with one’s values and identity (McGregor & Little, 1998; Waterman, 1993).

Measures of HWB and EWB are highly correlated suggesting that positive feelings and positive functioning tend to go hand in hand. Nevertheless, a number of studies suggest that the two sets of measures are distinguishable from one another (Compton, Smith, Cornish, & Qualls, 1996; Keyes, Shmotkin, & Ryff, 2002; Linley, Maltby, Wood, Osborne, & Hurling, 2009). Specifically, HWB measures (e.g., pleasant feelings, unpleasant feelings, life satisfaction) often correlate with each other more strongly than they do with EWB measures (e.g., meaning, growth, autonomy), and vice versa. Some studies have found distinct correlates of HWB and EWB measures. For example, HWB is associated with the pursuit of projects that are fun and likely to be successful; EWB is associated with projects that are closely aligned with one’s values and identity (McGregor & Little, 1998). Challenging activities are associated with a greater sense of EWB (personal expressiveness; Waterman, 1993) but can sometimes be associated with less HWB (positive emotion; Moneta & Csikszentmihalyi, 1996). Enacting moral behavior toward others is associated with EWB; *receiving* the same from others is associated with HWB (Hofmann, Wisneski, Brandt, & Skitka, 2014). The amount of time spent imagining the future was associated with greater EWB (meaning) but less HWB (happiness); in contrast, the amount of time spent thinking about the present was associated with greater HWB but was unrelated to EWB (Baumeister, Vohs, Aaker, & Garbinsky, 2013).

Additional well-being concepts have been proposed that are not consistently included in either hedonic or eudaimonic conceptions of well-being. Csikszentmihalyi (1990) described the state of flow, in which a person is optimally engaged with what they are doing. Flow states require a delicate balance between the challenges of a task and the person’s skill at meeting these challenges. Ideally an activity should not be too easy or too difficult but challenge the person at a level slightly above their current skills. This creates an opportunity for the expansion of one’s skill level if the challenge is met. Research suggests that flow states involve higher levels of engagement and concentration than nonflow states, but are not always accompanied by higher levels of pleasant feelings (Csikszentmihalyi & LeFevre, 1989; Moneta & Csikszentmihalyi, 1996). Thus, flow states may be more closely related to EWB (growth and mastery) than HWB.

Some accounts of well-being (Boehm, Peterson, Kivimaki, & Kubzansky, 2011; Diener, Wirtz et al., 2010; Su, Tay, & Diener, 2014) include optimism--the general expectation that one will experience more positive than negative outcomes in life (Carver & Scheier, 2003). The disposition to be optimistic is associated with greater satisfaction and happiness and lower levels of depression and stress (Scheier & Carver, 1992), lower risk of health problems and faster recovery from illness (Boehm & Kubzansky, 2012; Scheier & Carver, 1992; Seligman, 2013). Several of these studies show that optimism prospectively predicts better health outcomes even after controlling for a range of demographic and personality variables. These findings led Taylor and Brown (1988) to suggest that highly positive beliefs about one’s future, oneself, and one’s ability to control outcomes, might be important hallmarks of mental health. In particular, such “positive illusions” may be especially functional when facing adversity. Optimistic beliefs

tend to correlate strongly with measures of EWB (Diener, Wirtz et al., 2010; Su et al., 2014) and HWB (Lucas, Diener, & Suh, 1996), but are not completely synonymous with either conception of well-being.

Other conceptualizations have been proposed that include mixtures of HWB and EWB. Keyes (2002) offered the term *flourishing* to describe a condition characterized by high levels of both HWB and EWB. Seligman (2013) presented a similar model of flourishing called PERMA: positive emotion, engagement (flow), (positive) relationships, meaning, and achievement. According to Seligman, these five elements of well-being are pursued for their own sake and not necessarily to increase other well-being elements. Diener and colleagues (Diener, Wirtz et al., 2010; Su et al., 2014) also offered a conception of flourishing, viewing well-being as *social-psychological prosperity* or *capital*. This might be thought of as a set of beliefs or resources that not only enhance well-being but also strengthen mental and physical resilience in times of adversity. Such resources include those in the PERMA model, as well as optimism, given its power to predict health behavior and recovery.

Kashdan, Biswas-Diener, and King (2008) raised a number of issues with the concept of EWB. They noted that whereas HWB is consistently defined as the experience of pleasant affect, unpleasant affect, and life satisfaction, EWB consists of a range of constructs that vary across researchers. As a result, there is no unified operational definition of EWB, although certain components (e.g., growth, meaning, authenticity, and mastery) appear in most conceptions of EWB (Huta & Waterman, 2014). The challenge hinges on what theorists consider to be an optimally functioning person. Some components emphasize the integrity of the person (e.g., authenticity, autonomy), others emphasize social functioning (positive relationships), still others emphasize engagement with life and its challenges (growth, meaning, mastery, striving for excellence). More work is needed to understand how and why specific components of EWB are interrelated—with each other and with external outcomes.

Another theoretical issue concerns the very notion of EWB concepts as indicators of well-being (Kashdan et al., 2008; Ryan & Deci, 2001). For example, Ryff (1989) views autonomy, mastery, and positive relationships as defining elements of psychological well-being. A monk who lives alone in the mountains and is happy and satisfied with his life would be well in terms of HWB, but might not be functioning optimally in terms of EWB. In contrast, Ryan and Deci's (2000) self-determination theory posits autonomy, competence, and relatedness as universal needs that, if unfulfilled, may decrease HWB. Thus, the elements of EWB are thought of as *antecedents* to well-being rather than as *defining* well-being. A similar issue might apply to concepts such as flow and optimism. Are these defining elements of well-being or should they be considered antecedents of well-being? An answer to this issue is not easily resolved empirically, particularly when no single criterion of well-being exists. It also quite plausible that bidirectional influences exist among components of HWB, EWB, and other related concepts. Ultimately, the resolution of what constitutes well-being may depend on the theoretical perspective one chooses to adopt. Readers interested in a deeper discussion of these issues, should refer to the excellent volume on EWB edited by Vittersø (2016).

For remainder of this chapter, we elaborate on the components of HWB. The reason for this is that there is a larger body of research in this area, as well as a fairly consistent operational definition of its components (pleasant affect, unpleasant affect, and life satisfaction).

Affective Versus Cognitive Well-Being

HWB (subjective well-being; Diener, 1984) consists of an affective component and a cognitive component. Affective well-being (AWB) refers to the experience of pleasant and unpleasant feelings. A person with high AWB generally experiences a preponderance of pleasant over unpleasant feelings. Thus AWB is typically assessed by asking respondents how often they have experienced specific emotions (e.g., happiness, joy, contentment, sadness, anger, worry, etc.). Cognitive well-being (CWB) is based on an evaluation of how well one's life is going relative to an ideal state of affairs. A person with high CWB should judge that their goals, desires, and standards are largely met by the current conditions of their life. CWB is most commonly assessed by measures of life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985), but also includes satisfaction with specific areas of life such as health, work, and family (i.e., domain satisfactions; Diener, Suh, Lucas, & Smith, 1999). AWB and CWB are strongly correlated. To a certain extent, these interrelationships are expected. The fulfillment of valued goals and standards is often accompanied by pleasant affect whereas the lack of fulfillment may result in unpleasant affect. Thus, emotional experiences provide some information about how well one's life is going and thus may factor into one's judgment of life satisfaction (Schwarz & Clore, 1983; but see Yap et al., in press). Nevertheless, correlations between AWB and CWB are not so strong that they could be considered redundant. For example, Lucas et al. (1996) observed concurrent correlations as low as $-.30$ between life satisfaction and negative affect, and as high as $.65$ between life satisfaction and positive affect, on various self-report

measures of well-being.

Different processes are involved in the experience of AWB and CWB. Emotions are often experienced in reaction to specific events. In contrast, satisfaction judgments may involve a range of factors. This can include the specific standards one uses to judge whether life is going well, and how satisfied one is with specific areas of life (e.g. work, relationships, health; Kim-Prieto, Diener, Tamir, Scollon, & Diener, 2005). Compared with AWB, CWB tends to be based more on stable sources of information such as global assessments about one's life circumstances and domains of life, rather than specific events or activities (Luhmann, Hawkley, Eid, & Cacioppo, 2012; see also Schimmack & Oishi, 2005). Thus, if one's social relationships are generally supportive and enjoyable, a recent argument with a friend is unlikely to reduce CWB as much as AWB. The implication of this finding is that CWB should be more stable across time, whereas AWB should be more variable as it fluctuates with recent events. Analyses by Eid and Diener (2004) support this hypothesis.

If CWB tends to be based on information that is more stable (relative to AWB), then it should be more strongly associated with factors that stabilize or destabilize the general conditions of one's life. Indeed, income and unemployment correlate more strongly with CWB than with AWB (Diener, Ng, Harter, & Arora, 2010; Howell & Howell, 2008; Luhmann, Hofmann, Eid, & Lucas, 2012; Schimmack, Schupp, & Wagner, 2008; Tay & Diener, 2011). These factors are often related to the conditions of one's society more generally, and may explain why national differences tend to be larger in terms of CWB (Tay, Chan, & Diener, 2014). Major life events such as bereavement and childbirth also seem to have greater impact on CWB than AWB (Luhmann, Hofmann et al., 2012). Interestingly, whereas CWB decreased in the months following childbirth, AWB increased. Perhaps the birth of a child creates opportunities for pleasant social interactions, but the time spent caring for the baby and resulting lack of sleep negatively affect other areas of life (and hence CWB). Positive social relationships correlate more strongly with AWB than CWB. For example, social support is a strong predictor of positive emotions, and feeling respected is one of the strongest predictors of both positive and negative emotions (Tay & Diener, 2011).

One caveat to the notion that CWB is based more on stable information relative to AWB is that personality traits such as extraversion and neuroticism correlate more strongly with AWB (Schimmack et al., 2008). Although AWB may respond more to recent events, there are stable individual differences in mean levels of affect (see Trait versus State Well-Being). Covariation with personality traits may suggest that AWB is partly influenced by heritable predispositions to experience certain kinds of emotion. Extraverts may attend to positive stimuli more than introverts (Derryberry & Reed, 1994), and this tendency may increase the likelihood that they experience pleasant emotions. Extraverts may also actively seek pleasant social situations (Emmons & Diener, 1986). However, personality traits do correlate with CWB. A meta-analysis by DeNeve and Cooper (1998) examined a range of traits and did not find consistent differences in their association with CWB (life satisfaction) versus AWB. A key difference may be that Schimmack et al. controlled for the effect of general evaluative biases (i.e. a tendency to rate oneself positively on a range of traits) when comparing the effect of personality traits on AWB and CWB. Additional studies suggest that although CWB is associated with extraversion and neuroticism, this relationship is mediated by AWB (Schimmack, Diener, & Oishi, 2002; Schimmack, Radhakrishnan, Oishi, Dzokoto, & Ahadi, 2002). That is, these traits are associated with CWB largely because they influence levels of pleasant and unpleasant affect, which in turn influence how well people evaluate their lives.

Thus far, AWB and CWB have been discussed in a somewhat monolithic fashion to highlight the differences between them. That said, each construct in itself can be understood in terms of more specific components and processes that are important for understanding the causes and consequences of well-being.

Major Aspects of AWB

Valence. A basic feature of affective experience is the degree to which it is pleasant or unpleasant. This quality is fundamental to the notion of AWB as the preponderance of pleasant over unpleasant feelings. The distinguishability of pleasant (positive) affect versus unpleasant (negative) affect has been debated and studied from many perspectives. The degree to which they are correlated with each other depends on how they are measured--a point that will be revisited in this chapter. For now, it is generally understood that positive (PA) and negative affect (NA) are separable though not completely independent. In this section, the emphasis is on their distinct correlates and causes. The validity of the tripartite model of subjective well-being (PA, NA, and life satisfaction) depends partly on the identification of factors that are uniquely related to PA and NA (Busseri & Sadava, 2011). For example, the fulfillment of basic needs is a strong predictor of NA but not of PA (Tay & Diener, 2011). Struggling to find food and shelter may induce unpleasant emotions; however, having food and shelter in and of itself may not produce many pleasant emotions.

A number of studies suggest that PA and NA are associated with distinct personality traits.

Extraversion is more strongly associated with PA, whereas neuroticism is more strongly associated with NA (DeNeve & Cooper, 1998). These differences could be due to overlapping item content in that some extraversion scales include subscales directly measuring positive emotion (e.g., the NEO-PI-R; Costa & McCrae, 1992), and neuroticism by definition involves the tendency to experience negative emotion. However, specific behaviors associated with extraversion (e.g., social activities) are also associated with higher levels of PA but are not consistently related to NA (Clark & Watson, 1988). Moreover, *acting* extraverted is associated with increases in momentary PA for both introverts and extraverts (Fleeson, Malanos, & Achille, 2002). In contrast, neuroticism and dispositional negativity are associated with greater sensitivity in regions of the brain that are associated with threat perception (e.g., the amygdala; Everaerd, Klumpers, van Wingen, Tendolkar, & Fernandez, 2015; Shackman et al., 2016). This suggests that the correlation between self-reported neuroticism and NA is not simply due to a tendency to endorse negative items.

Both PA and NA predict health outcomes. Many studies have established that chronic levels of negative emotion are associated with increased risk of health problems such as coronary heart disease (Frasure-Smith, Lesperance, & Talajic, 1995; Russek, King, Russek, & Russek, 1990; Smith, 1992). Negative emotions such as anger and anxiety activate the body's stress response, which can impair immune system functioning if such activation is chronic (O'Leary, 1990). Independently of NA, several studies have found that PA predicts mortality and disease in the direction of lower risk (Diener & Chan, 2011; Pressman & Cohen, 2005). In a classic study, Cohen, Doyle, Turner, Alper, and Skoner (2003) exposed participants to the cold virus. Those who tended to experience PA were less likely to develop a cold than those less inclined to experience PA; the tendency to experience NA was not associated with cold susceptibility. In a world sample, Pressman, Gallagher, and Lopez (2013) found that both PA and NA were uniquely associated with self-reported health. The size of these relationships were similar on average, although the positive correlation between PA and health was larger in less wealthy countries. The processes by which PA reduces the risk of illness require further study. Effects of PA on health may be related to stronger immune system functioning, healthier behavior, or stronger social support (Pressman & Cohen, 2005). There is also some evidence that positive emotions quicken the recovery of cardiovascular activation triggered by negative emotions (Fredrickson & Levenson, 1998), potentially offsetting the stress response.

Frequency versus intensity. The frequency of an emotion (how often it occurs) can be distinguished from its intensity (how strongly it is felt). According to Schimmack and Diener (1997), mean levels of affect reflect a combination of frequency and intensity. Suppose that each day for one week, participants rated how happy they feel on a scale from 0 (*not at all*) to 10 (*extremely*). Their mean level of happiness across the week could be computed by averaging the seven ratings they made daily. Joe only experienced happiness on two days, but both days were fairly intense (7). In contrast, Ted experienced happiness every day of the week, but at a lower intensity (2). Both Joe ($7 \times 2 / 7 = 2$) and Ted ($2 \times 7 / 7 = 2$) would end up with the same mean level of happiness. However, both men clearly experience happiness differently. Joe is happy less often, but when happy, he feels it intensely. Ted is happy often but at a mild intensity. These differences can only be captured if we separate intensity from frequency. Specifically, the average intensity is best understood as the magnitude or strength of an emotion *when* it is felt (Schimmack & Diener, 1997). By this definition, the average intensity of Joe's happiness is 7, whereas Ted's is 2. Frequency might be measured as the number of times happiness was experienced at all (i.e., a non-zero rating was given). In that case, Joe's frequency is 2, and Ted's is 7. Thus, by one measure (intensity), Joe is happier; but by another measure (frequency), Ted is happier. Are both statements correct? One way to answer this question is to ask Joe and Ted to evaluate their lives more generally: how happy are they overall? Diener, Sandvik, and Pavot (1991) found that measures of long-term, global well-being were better predicted by the frequency of happiness rather than its intensity. (Diener et al. actually measured frequency in terms of the proportion of time participants felt more positively than negatively).

Intense positive emotions may be less predictive of overall well-being because such experiences tend to be uncommon (Diener et al., 1991). Their rarity implies that the occurrence of such intense emotions may not adequately represent a person's normal life circumstances. Furthermore, it appears that people who experience intense PA are also likely to experience intense NA (Schimmack & Diener, 1997; Diener, Larsen, Levine, & Emmons, 1985), which would seem to counteract the effects intense PA. Several processes may contribute to the tendency to experience both intense PA and NA (Diener, Colvin, Pavot, & Allman, 1991). One such process is highly valuing and investing in certain goals and events (Diener et al., 1991; Pomerantz, Saxon, & Oishi, 2000; Schimmack & Diener, 1997). The goals that are extremely valued will produce more intense PA if they are attained (e.g., winning a championship) but more intense NA if are not.

The distinction between frequency and intensity may affect the interrelation between PA and NA. Diener, Larsen et al. (1985) showed that over an extended period of time, mean levels of PA and NA are

only weakly correlated--suggesting that they are independent. However, mean levels of affect confound frequency and intensity. When intensity is partialled out, PA and NA are negatively correlated. This is because the remaining variation in mean level affect reflects the frequency of emotional experiences, which tend to be inversely related. This finding is qualified by the definition of frequency that is used. When frequency is defined as a proportion of time spent feeling positively versus negatively, a negative relation is observed because time is inherently limited. More time spent feeling sad means less time to spend feeling happy. However, if frequency is defined in more absolute terms--a simple count of how many times one felt PA or NA--then frequencies are positively correlated (Schimmack & Diener, 1997; Schimmack, Oishi, Diener, & Suh, 2000). This is consistent with the observation that people who experience many positive events also tend to experience negative events (Magnus, Diener, Fujita, & Pavot, 1993).

Other dimensions of affect. In addition to their valence, frequency, and intensity, emotions may also be characterized by their level of arousal (Barrett & Russell, 1998; Larsen & Diener, 1992). Pleasant emotions may be low (e.g., calm) or high (e.g., enthusiasm) on arousal. Similarly, unpleasant emotions may be low (e.g., boredom) or high (e.g., anxiety) on arousal. Arousal represents a dimension of affective experience that is empirically distinguishable from intensity (Kuppens, Tuerlinckx, Russell, & Barrett, 2013; Schimmack & Diener, 1997). A person who is extremely calm may not be any more aroused than one who is only somewhat calm. Although AWB primarily emphasizes the valence of affective experience, the relation between emotions and other variables may also depend on arousal. In their review of the literature, Pressman and Cohen (2005) observed that mild levels of PA tend to be associated with better immune functioning; in contrast, highly arousing PA can be detrimental in a manner that is similar to highly arousing NA. People with asthma may have more difficulty breathing when they experience extreme NA or PA (Ritz & Steptoe, 2000), although it is unclear from this study whether arousal or intensity is the key factor given that a mixture of high arousal and low arousal affects were combined in the NA and PA scores. Given that depression and anxiety are often correlated, some researchers have suggested that a general negative disposition may underlie the detrimental effects of high arousal (anger and anxiety) and low arousal (depression) NA on health (Suls & Bunde, 2005).

The cultural value of certain emotions may depend on their level of arousal and not just their valence. Although people generally want to feel more pleasant than unpleasant emotions, the specific types of emotions they want to feel varies across culture. For instance, European Americans tend to value high-arousal PA (e.g., excitement) more than Hong Kong Chinese; the latter value low-arousal PA (e.g., calmness) more than the former (Tsai, Knutson, & Fung, 2006). Because East Asian cultures emphasize attention and accommodation to the social environment, low-arousal PA may be especially functional in this cultural context; in contrast, U.S. cultural norms tend to emphasize the agency of the individual and high-arousal PA may facilitate the assertion of such agency. Tsai et al. found that European Americans tended to be more depressed when they did not experience *high-arousal* PA as often as they desired; in contrast, Hong Kong Chinese were more depressed when they did not experience *low-arousal* PA as often as they desired.

Another dimension that may be culturally variable is the degree to which emotions are interpersonally engaging (e.g., feeling close to someone) or disengaging (e.g., feeling proud or superior to others). The frequency of *disengaging* emotions was a stronger predictor of general "good feelings" among U.S. participants; in contrast, the frequency of *engaging* emotions predicted good feelings among Japanese participants (Kitayama, Markus, & Kurokawa, 2000; Kitayama, Mesquita, & Karasawa, 2006). The findings of Tsai et al. and Kitayama et al. are consistent with the general tendency for East Asians to value collectivism and Westerners to value individualism (for a review, see Tov & Nai, *in press*).

Major Aspects of CWB

CWB judgments involve an evaluative assessment of one's life as a whole (global measures) as well as specific aspects of life (domain specific measures). Some researchers describe CWB as an attitude (or evaluative belief) about one's life (Schimmack, 2008). Most CWB concepts assume that a comparison is made between one's current state and a desirable state of affairs (Campbell, 1976; Diener et al., 1985). Positive CWB (e.g., satisfaction) arises when the current state or circumstances meet or exceed what is desired; otherwise, negative CWB (e.g., dissatisfaction) may arise. Measures of global CWB include life satisfaction (Diener, Emmons et al., 1985) and Cantril's (1965) self-anchoring striving scale, which is also referred to as *life evaluation* (Kahneman & Deaton, 2010; Tay & Diener, 2011). Life satisfaction (LS) can be assessed directly by asking respondents how satisfied they are with life, as well as additional questions about whether they are getting the important things they want in life. The life evaluation measure asks people to think about the best possible and worst possible life they could live, and to locate their current life somewhere in between these two anchors. The two measures correlate strongly with each other ($r = .57$ and $.82$ at the individual and nation levels, respectively; Diener, Kahneman, Tov, & Arora, 2010). People may also have evaluative beliefs about specific areas of life (e.g., work, family, health, and leisure). These more

specific *domain satisfaction* (DS) judgments may be based on more specific standards (e.g., whether pay is commensurate with job skills and hours). A key point is that the individual decides for himself or herself the standards by which they judge their life and its domains.

Top-down versus bottom-up models. How does a person evaluate his or her life *as a whole*? The target of judgment is extremely broad. One hypothesis is that people evaluate specific domains (DS) first. Satisfaction across domains is then aggregated to arrive at satisfaction with life as a whole (LS; Campbell, Converse, & Rodgers, 1976). This bottom-up model assumes that LS is derived from satisfaction with important areas of life. Thus, conditions at work, the quality of relationships, health, and other relevant domains each contribute to LS. One problem with this model is that LS judgments tend to be higher than what would be predicted from a set of DS judgments (Diener, Napa Scollon, Oishi, Dzokoto, & Suh, 2000). Moreover, this positivity bias is systematically related to cultural ideals regarding LS. That is, people who live in cultures that strive for higher levels of LS tend to exhibit larger biases (i.e., larger LS given their DS scores). This finding supports the plausibility of top-down models, in which the direction of causality runs from LS to specific DS judgments. In these models, one is satisfied with life not so much because of satisfaction with work and relationships; instead, satisfaction with these domains is the product of a general tendency to be satisfied with life as a whole. A more extreme top-down model views personality traits such as extraversion and neuroticism as causing both LS and DS. This model implies that correlations between LS and DS are fully accounted for by personality traits. Heller, Watson, and Ilies (2004) found no support for such a model. Although personality traits do correlate with LS and DS, the latter two remain strongly correlated with each other even after accounting for personality. Instead, support was found for both top-down and bottom-up processes. Personality traits can be viewed as influencing LS, which in turn influences specific DS judgments (top-down process). Alternatively, traits can be viewed as causing both LS and DS (top-down), with additional effects of DS on LS (bottom-up). It is likely that both processes operate together (Schimmack, 2008). One way the relation between LS and DS could simultaneously reflect top-down and bottom-up processes is in the weight that individuals place on specific domains. For example, happy people place more weight on the domain they are most satisfied with when judging LS; in contrast, unhappy people place more weight on the domain they are *least* satisfied with (Diener, Lucas, Oishi, & Suh, 2002). Thus, the top-down process is reflected in how a person weights each domain, and the bottom-up process is reflected in the effect of that domain on LS.

Effects of heuristics versus stable sources of information. Schwarz and Strack (1999) noted that the task of evaluating one's life as a whole is actually quite difficult. There are a potentially large number of important life domains so that a truly comprehensive assessment of one's life should take hours. Yet, people seem to answer LS questions fairly quickly. To account for this phenomenon, Schwarz and Strack proposed a judgment model of well-being. They suggested that CWB judgments are largely constructed on-the-spot from whatever information is currently on the person's mind and deemed relevant. When the target is broad (e.g., life as a whole), many kinds of information are deemed relevant. This includes current mood as well as social comparison. The narrower the target is (e.g., as in DS judgments), the more selective the use of information. The number of dates a person had in the past month could be relevant for judging LS but not satisfaction with health. The judgment model implies that LS judgments are highly unstable--susceptible as they are to momentary influences. However, Schimmack and Oishi (2005) showed that the effects of momentary factors such as mood and priming are generally small (see also Yap et al., in press). Instead, LS judgments are largely based on chronically accessible information--specifically, on how well one is generally doing in important areas of life.

State versus Trait Conceptions of Well-Being

The scientific study of well-being (and happiness in particular) was once questioned on the grounds that it referred to phenomena that were momentary and fleeting. The judgment model of well-being (Schwarz & Strack, 1999), for example, assumes that people do not actually have enduring representations of how happy and satisfied they are with life. However, Headey and Wearing (1989) provided evidence that PA, NA, and LS were fairly stable across a six-year period (r 's were between .35 to .52; see also Lucas & Donnellan, 2012; Schimmack & Oishi, 2005). These correlations suggest that HWB components contain some stability, but not so much stability that they remain unchanged in response to life events (Lucas, 2007; Luhmann, Hofmann et al., 2012). It is now recognized that well-being consists of both state-like variation and trait-like stability (Eid & Diener, 2004). Trait levels of well-being refer to how a person feels or how satisfied they are in general or on average (across time and situations). State levels of well-being refer to feelings and satisfaction at a particular moment in time or within a restricted period of time (e.g., the past week). Trait measures of well-being tend to be influenced by personality traits, cultural values, memory biases, and general beliefs about the self (Robinson & Clore, 2002b). State measures of well-being may reflect unstable factors such as the day of the week, temperature, or the nuances of a recent event or

activity. Thus, state and trait measures of well-being involve different processes; they are influenced by different factors and are associated with distinct outcomes.

Measures of well-being can be placed on a continuum ranging from state-like to trait-like. It is helpful to distinguish between online, retrospective/recall, and global measures of well-being (Kim-Prieto et al., 2005; Scollon, Diener, Oishi, & Biswas-Diener, 2004). *Online* measures ask respondents to report how they are feeling “right now”. Because respondents are often randomly alerted to complete a survey (e.g., through smartphone), online measures may instruct participants to report how they were feeling just before they were alerted to avoid effects of the alarm itself on their mood. *Recall* or retrospective measures ask respondents to report how they felt over a specified period of time. The time frame can range from the past hour to the past year. Finally, *global* measures typically ask respondents to report their well-being in general. Whereas online measures capture well-being states and global measures capture well-being traits, recall measures reflect a mixture of states and traits. Robinson and Clore (2002a) showed that people spend increasingly more time assessing their emotion as the target period increases from the past hour to the past few weeks. This is consistent with the idea that people are recalling the specific events that they experienced: the longer the target period, the more events there are to recall. However, when the target period concerned the past few months or longer, no further increase in time was observed. People spent nearly as much time recalling their emotion over the past few years as they did over the past few weeks. This suggests that at some point, people stop recalling specific events and rely on more general beliefs about themselves. Such beliefs are more likely to reflect the influence of personality traits and cultural values. Distinctions between online, recall, and global measures produce important insights about affective structure, health, and cultural variation in well-being.

Structure of Well-Being

Diener and Emmons (1984) showed that state PA and NA tend to be inversely correlated at a single moment in time. People rarely report feeling pleasant and unpleasant at the same time. However, when reporting how they felt over the past year, levels of PA and NA were weakly correlated. Additional work by Diener and Iran-Nejad (1986) clarified that state PA and NA tend not to co-occur at high levels of intensity; however at lower levels of intensity, people can experience PA and NA in different combinations (see also Tay & Kuykendall, 2017). The co-occurrence of low intensity state PA and NA, combined with the inverse relation observed at high intensities may contribute to their reduced correlation at broader time frames. Thus, PA and NA may diverge more from each other at trait levels than at state levels. Watson, Clark, and Tellegen (1988) did not observe consistent effects of time frame on the correlation between PA and NA--which were largely independent in their studies. However, their measures consisted of predominantly high-arousal PA and NA terms (e.g., excited, distressed). Thus the typically inverse relation between valenced states may have been offset by positive covariation due to high arousal levels (Barrett & Russell, 1998).

Far less work has examined momentary measures of CWB and how these relate to AWB. Tov and Lee (2016) examined daily satisfaction (a state-like measure of CWB) and its covariation with daily affect. Daily satisfaction was more strongly correlated with daily PA than daily NA. The effect replicated when participants reported their well-being over the past few days. A similar pattern has also been observed with a time frame of the past two months (Luhmann, Hawkey et al., 2012) as well as among global, trait measures of HWB (Lucas et al., 1996; Robinson, 2000). Thus, the relation between CWB and PA appears to be similar at both state and trait levels--although more research is needed.

Relations Between AWB and Health

Most research findings that suggest a protective effect of PA and detrimental effects of NA on health are based on trait measures of affect (Boehm & Kubzansky, 2012; Diener & Chan, 2011; Suls & Bunde, 2005; Pressman & Cohen, 2005). These measures tend to reflect the frequency rather than intensity of emotional experience (Schimmack & Diener, 1997). Thus, it is chronically experiencing these emotions that appears to affect health outcomes. Such effects could reflect other personality traits or individual differences that predispose people toward healthy or unhealthy behaviors. For example, conscientiousness is associated with a variety of health protective behaviors (Bogg & Roberts, 2004) and is also correlated with trait measures of well-being (DeNeve & Cooper, 1998). Interestingly, however, these effects often hold when controlling for demographic factors such as age and income.

The relation between emotion and health is more complex when considering state PA and NA. As noted earlier, state PA--particularly high arousal PA--can sometimes affect cardiovascular and pulmonary functioning in a way that is detrimental for those already predisposed to suffer from asthma or heart attacks (Pressman & Cohen, 2005). In contrast, although trait NA is associated with negative health outcomes, there may be circumstances in which state NA is beneficial. Advertising campaigns that use fear to promote healthy behavior (e.g., anti-smoking, vaccination) appear to be more effective at inducing changes in

attitudes and behavior that non-fear appeals (Tannenbaum et al., 2015). Some studies also suggest that state anxiety and guilt may motivate patients to better adhere to treatment protocols than those who do not experience these emotions (Mayne, 1999).

Retrospective Well-Being

A concern with recalled or retrospective judgments of well-being is their susceptibility to memory biases (Schwarz & Strack, 1999). They may also be vulnerable to heuristic biases such as peak-and-end effects (Fredrickson, 2000)--the tendency to evaluate a past episode by its most intense experience as well as its ending, with less weight placed on the overall duration of the episode. If recalled experiences are inaccurate, what utility could they have for understanding a person's well-being? Although retrospective well-being assessments are far from a perfect recollection of past experiences, they do reflect actual experiences (Scollon et al., 2004; Tov, 2012). Moreover, peak-and-end effects are not consistently observed when emotions are recalled for time frames that involve several episodes (Miron-Shatz, 2009; Parkinson, Briner, Reynolds, & Totterdell, 1995). Instead, the average level of affect experienced during the period is a stronger predictor of retrospective well-being than either peak or end experiences. Finally, retrospective well-being judgments mediate the effect of daily events on global well-being measures, even after controlling for trait happiness and neuroticism (Tov, 2012). Thus, how we remember our well-being over the recent past forms a bridge from momentary well-being to more stable forms of well-being.

Retrospective judgments have important implications for decision-making. For example, the decision or desire to repeat a vacation was predicted by retrospective but not online measures of emotion (Wirtz, Kruger, Scollon, & Diener, 2003). Cultural differences in well-being may also manifest in retrospective measures more strongly than online measures. Oishi (2002) found that participants of Asian descent tended to report lower retrospective well-being over the past week than European Americans. However, the two groups tended not to differ on measures of online well-being during the same week. This suggests that retrospective well-being may be influenced by cultural norms and values and is consistent with Robinson and Clore's (2002b) model of emotional self-report. More specifically, culture may shape people's beliefs about which emotions are desirable to experience (Tsai et al., 2006), and such beliefs may influence how people remember and reconstruct their past emotional experiences (Scollon, Howell, Caldwell, & Ito, 2009). On the other hand, cultural differences in online emotional experience have been reported in other studies (e.g., Scollon et al., 2004; Kitayama et al., 2006). Such differences appear to be larger for disengaged emotions (e.g., pride and anger) than for other emotions—with Asians tending to report lower levels than European Americans. Thus, the extent to which culture influences retrospective versus online affect may also depend on the particular emotional state examined.

On the whole, the above findings offer some insight into how global well-being can be stable in the face of most events but still be responsive to change during major life events. Cultural values, personality traits, and other individual differences may influence how we remember our recent past, and these influences may act on global well-being in a similar manner. However, these factors may only shape memory to a certain point. Actual experiences impose a reality constraint on recall biases. A person who is injured in a car accident may not be able to recall the experience as a positive one no matter how inclined they are toward positivity.

Future Directions

A great deal of research has examined the structure and correlates of PA, NA, and LS. This work has advanced the field but there remains much to learn about well-being. First, many studies separately examine AWB and CWB. Researchers have only recently begun to understand the processes that are unique to these components. For example, Luhmann, Hofmann et al. (2012) find some evidence that adaptation to life events occurs more quickly for AWB than CWB—but the findings depend on the particular event (e.g., bereavement versus unemployment). Few studies have compared the unique effects of PA, NA, and LS on health. Wiest, Schütz, Webster and Wurm (2011) observed that both PA and LS (but not NA) independently predicted mortality. Additional research on the unique or divergent correlates of HWB components provides important insights into how interventions can best enhance well-being, or why some interventions and policies fail to obtain their desired effects. In addition to measuring AWB and CWB, researchers should also attend more to how PA and NA are operationalized. Certain measures of affect (e.g., Watson et al., 1988) measure high-arousal states, other measures are more valenced-based (e.g., SPANE; Diener, Wirtz et al., 2010).

More theoretical and empirical work is needed to understand how EWB should be conceptualized, as well as the processes that contribute to convergence and divergence between HWB and EWB. Following the recommendation of Kashdan et al. (2008), it will be extremely informative to study specific components of EWB and how they relate to components of HWB. For example, although meaning and satisfaction are highly correlated, they diverge more in response to negative experiences than positive

experiences (Tov & Lee, 2016). Although positive experiences are generally associated with greater meaning and satisfaction, negative experiences (e.g., a romantic break-up) can be meaningful but *dissatisfying*. In addition, the implications of an event for one's future appears to be a predictor of meaning but not satisfaction (see also Baumeister et al., 2013 for a related analysis).

Efforts to identify the unique correlates and processes underlying AWB, CWB, HWB and EWB are likely to require large sample sizes to detect such differences. This is because these constructs tend to be strongly correlated with each other so that the amount of unique variance (e.g., in EWB after controlling for HWB) will tend to be small. For example, Tov and Lee's (2016) observation that certain negative experiences are negatively correlated with satisfaction but positively correlated with meaning is based on thousands of events reported by over 2000 participants. These correlational differences amounted to a Cohen's *Q* of .05, which is a small effect. Realistically, many differences among well-being components will be in the small to moderate range. Nevertheless, small effects can be theoretically and practically important—particularly when they represent phenomena (e.g., daily experiences) that may cumulate over time (Abelson, 1985). Well-being researchers who seek to uncover such effects will need to sample many people and experiences to ensure that differences in well-being components are not simply due to noise or random error. Large sample sizes also allow researchers to use more sophisticated statistical methods (e.g., structural equation modeling) to control for measurement error when they examine how different aspects of well-being are related to other outcomes.

Occasionally, the contrast between HWB and EWB is described as “feeling good” versus “doing good.” This contributes to the view that EWB is less affectively tinged than HWB. Indeed, certain elements of EWB (e.g., mastery, growth, flow) are enhanced by activities that challenge the person. Such activities may not be pleasant but contribute to a person's development. However, other dimensions of affective experience may be more relevant for EWB. For example, inherent in the experience of flow (Csikszentmihalyi, 1990) is the notion of an optimal level of arousal. A task that is too easy (skills exceed the level of challenge) induces boredom; a task that is too difficult (challenges exceed skills) induces anxiety. Thus the balance between challenge and skills maintains a level of arousal that facilitates concentration, interest, and engagement. Ryan and Frederick (1997) describe subjective vitality as a feeling of positive energy that arises from the pursuit of activities that are personally expressive or self-actualizing— a feeling of being alive. Subjective vitality correlated only modestly with high-arousal PA suggesting that it reflects a distinct aspect of experience. Thus, similar to HWB, it may be possible to conceptualize EWB as consisting of distinct affective and cognitive elements. This expanded view of EWB offers more avenues to explore processes that link these two well-being conceptions.

A final related point is that divergences and similarities between state and trait measures of well-being deserve more attention. Divergences are important to identify and understand because they prevent inferential fallacies. For example, although chronic or trait NA is deleterious to health, it would be erroneous to conclude from this that state NA is equally deleterious. Momentary anxiety could lead one to take one's symptoms seriously and seek early care, and thus be beneficial. Similarities are equally valuable to identify. If trait-level relations are also mirrored at the state-level, this can guide intervention efforts toward specific behaviors and experiences that enhance well-being. For example, if extraverted *behavior* induces PA (mirroring the relation between extraversion and PA at the trait level), then well-being interventions might teach skills to enact these types of behaviors with the idea that such tendencies over time may contribute to higher but stable levels of PA. The state-trait distinction could also further the understanding of EWB components--which have tended to be measured as traits rather than states (Waterman, 2008).

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